UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,247	09/15/2003	Derrick Lin	42P10543C	2876

8791 7590 11/04/2004	EXAMINER	
BLAKELY SOKOLOFF TAYLOR & ZAFMAN	THAI, TUAN V	
12400 WILSHIRE BOULEVARD		
SEVENTH FLOOR	ART UNIT	PAPER NUMBER
LOS ANGELES, CA 90025-1030	2186	

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 January 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4, 12-14, 16, 17, 19 and 21* is/are pending in the application.

4a) Of the above claim(s) *5-11, 15, 18 and 20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 12-14, 16, 17, 19 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date *1/12/2004*.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

Part III   DETAILED ACTION

Specification

1.   This application is continuation of application 09/561,145;

now patent 6,631,452.   Claims 5-11, 15, 18 and 20 have been

canceled.   Claims 1-4, 12-14, 16-17, 19 and 21 are presented for

examination.

2.   Applicant is reminded of the duty to fully disclose

information under 37 CFR 1.56.

Double Patenting

3.   The non-statutory double patenting rejection, whether of the
obviousness-type or non-obviousness-type, is based on a
judicially created doctrine grounded in public policy (a policy
reflected in the statute) so as to prevent the unjustified or
improper timewise extension of the "right to exclude" granted by
a patent.   *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA
1969); *In re Vogel,* 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re
Van Ornum,* 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Longi,*
759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); and *In re Goodman,*
29 USPQ2d 2010 (Fed. Cir. 1993).

A timely filed terminal disclaimer in compliance with 37
CFR 1.321(b) and (c) may be used to overcome an actual or
provisional rejection based on a non-statutory double patenting
ground provided the conflicting application or patent is shown to
be commonly owned with this application.   See 37 CFR 1.78(d).

Effective January 1, 1994, a registered attorney or agent of
record may sign a terminal disclaimer.   A terminal disclaimer
signed by the assignee must fully comply with 37 CFR 3.73(b).

4.   Claims 1-4, 12-14, 16-17, 19 and 21 are rejected under the
judicially created doctrine of obviousness-type double patenting
as being unpatentable over claims 1, 3, 13, 15-17 and 19 of U.S.
Patent No. 6,631,452. Although the conflicting claims are not
identical, they are not patentably distinct from each other
because the wording of the instant claims are broader as compared
to the limitations of the original claims. The instant claims
are slightly broader in their new form. Examples are: Claims 1,
3-4; 2; 12-14; 16; 17; 19 and 21 of the current application are
obvious slight variation of claims 1; 3; 13; 15; 16; 17 and 19
respectively of patent 6,631,452. The claims are not patentably
distinct from each other because the claims are directed to the
same system and method for managing data in a register stack of a
computer system having a memory, a register file and a register
stack engine for monitoring activity of the memory channel/bus to
transfer data responsive to available memory channel bandwidth.

Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms
the basis for all obviousness rejections set forth in this Office
action:

(a) A patent may not be obtained though the invention is not
    identically disclosed or described as set forth in section
    102 of this title, if the differences between the subject
    matter sought to be patented and the prior art are such that

the subject matter as a whole would have been obvious at the
time the invention was made to a person having ordinary
skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which
the invention was made.

6.   Claims 1-4, 12-14, 16-17, 19 and 21 are rejected under 35

U.S.C. 103(a) as being unpatentable over Hansen et al. (USPN:

6,006,318); hereinafter Hansen; in view of Dowling (USPN:

6,128,728).

As per claims 1, 12 and 16; Hansen teaches the invention as

claimed including a method for managing data in a computer system

comprising multiple memory devices 92 which are accessible by the

general purpose media processor 12 (e.g. see figure 6; column 11,

lines 43 et seq.); a register file coupled to the memory through

a memory channel, the register file to store data for one or more

procedures in one or more frames, respectively (e.g. see column

5, lines 34 et seq.). Hansen, with one exception, does not

specifically disclose and a register stack engine to monitor

activity on the memory channel for available bandwidth on the

memory channel/bus and to transfer data between selected frames

of the register file. Dowling, in his teaching of virtual shadow

registers and virtual register windows, discloses the missing

element that is known to be required in the system of Hansen in

order to arrive at the Applicant's current invention wherein

Dowling discloses the DMA/DRA controller (as being equivalent to

the claimed register stack engine) for monitoring the bus

(channel) activity to determine when unused memory bandwidth is
available for moving/transferring the data contents between the
shadow registers and memory buffer (e.g. see column 7, lines 43-
49). Accordingly, it would have been obvious to one having
ordinary skill in the art at the time the current invention was
made to employ the teaching of monitoring the activity of memory
bus/channel for available bandwidth to transfer data within
system units/frames as taught by Dowling for that of Hansen in
order to arrive at Applicant's current invention. In doing so,
it would (a) maximize the bus utilization to avoid any waste of
channel bandwidth in data transfer, and (b) increasing system
throughput; therefore being advantageous.

As per claim 2, wherein the memory includes a backing
store/portions and the register stack engine transfers data
between the selected frames and the backing store is taught by
Hansen; for example, Hansen discloses his memory having multiple
memory portions and instruction set from memory management unit
preferably includes load and store instructions that move data
between memory and the register file 110, branch instructions to
compare the content of registers and transfer control, and
arithmetic operations to perform computations on the contents of
registers (e.g. see column 14, lines 59 et seq.; column 15, lines
48 et seq.);

As per claims 3-4 and 13, the further limitation of a

portion of the register file is organized as a register stack is

equivalently taught by Hansen as the 64 general purpose registers

along with program counter/pointer contained in the register file

110 are all available to the user/programmer, and comprise a

portion of the user state of the general purpose media processor

12, wherein the general purpose registers are preferably capable

of storing any form of data (e.g. see column 13, lines 10 et

seq.);

As per claim 14, Hansen discloses filling data from the

backing store to a current oldest clean register when capacity is

available on the memory channel is taught as the concept of data

fetching/pre-fetching (e.g. see column 5, line 66 bridging column

6, line 25);

As per claim 17, the further limitation of a load/store unit

and the register stack engine monitors the load/store unit to

determine available bandwidth to the memory system is taught by

Hansen as the instruction set from the management unit preferably

includes load and store instructions that move data between

memory and the register file 110, branch instructions to compare

the content of registers and transfer control, and arithmetic

operations to perform computations on the contents of registers

(e.g. see column 15, lines 48 et seq.);

As per claims 19 and 21, the register stack engine transfers

data for inactive procedures responsive to a mode status

indicator which is set under software control responsive to a
type of application to run on the computer system is taught by
Hansen to the extent that it is being claimed; for example,
Hansen discloses when the communication channel 156 is inactive
or idle, such as during initialization and between transmitted
packets, an idle packet, consisting of an all-zero byte and an
all-one byte is transmitted through the communication channel 156
wherein software is employed to adaptively adjust the skew in the
channel 156 through digital skew fields (e.g. see column 22,
lines 30 et seq. and column 20, lines 41 et seq.);

Conclusion

7.   The prior art made of record and not relied upon is
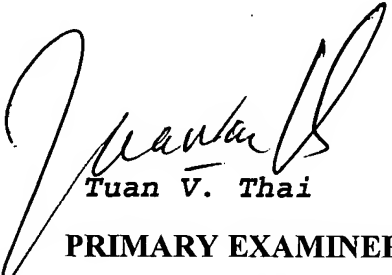considered pertinent to applicant's disclosure.

8.   Any inquiry concerning this communication or earlier
communications from the examiner should be directed to Tuan V.
Thai whose telephone number is (571)-272-4187. The examiner can
normally be reached from 6:30 A.M. to 4:00 P.M.

     If attempts to reach the examiner by telephone are
unsuccessful, the examiner's supervisor, Mathew M. Kim can be
reached on (571)-272-4182. The fax phone number for the
organization where this application or proceeding is assigned is
703-872-9306. Information regarding the status of an application

may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TVT/October 22, 2004

Tuan V. Thai

PRIMARY EXAMINER

Group 2100